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PATENT SPECIFICATION

DRAWINGS ATTACHED

Inventor: DAVID ERNEST SMITH

853,891

Date of filing Complete Specification: Feb. 20, 1959.

Application Date: March 28, 1958. *No. 9955/58.*

Complete Specification Published: Nov. 9, 1960.

Index at acceptance:—Class 18, A6H4, A8C(1A4:1A5:3).

International Classification:—B65d.

COMPLETE SPECIFICATION

Improvements in Collapsible Cartons

We, TILLOTSONS (LIVERPOOL) LIMITED, a British Company, of Commercial Road, Liverpool, 5, Lancashire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to collapsible cartons.

According to the present invention each of four interhinged side walls of a collapsible carton has at the same end thereof an intermediate panel which is folded against the side wall and which has hinged thereto a closure flap which is thereby spaced from that end of the wall, two of said flaps each being formed with a substantially diagonal hinge line extending from one corner thereof adjacent to its intermediate panel and at the outer side of which each of said two flaps is connected to an adjacent flap to provide a self-erecting closure or base which when erect is spaced from said end of the carton.

Said closure flaps will usually be base flaps and the width of said intermediate panels dependent upon the extent to which it is desired that the base should be spaced above the end of the carton.

If desired said closure flaps may be formed with cut-outs of arcuate or other suitable form to present, when the carton is erect, a base with a hole of circular or other desired shape.

The invention includes a carton blank comprising a row of four interhinged wall panels, a row of four intermediate panels hinged respectively to the wall panels at one end thereof and four closure flaps hinged to the intermediate panels, two of said closure flaps having substantially diagonal hinge lines extending from or near one corner thereof adjacent to its intermediate flap.

The invention is further described by way of example with reference to the drawings accompanying the Provisional Specification and in which:

Fig. 1 illustrates one form of blank according to the invention;

Fig. 2 is a fragmentary perspective view illustrating the lower end of an erect carton made from the blank of Fig. 1;

Fig. 3 illustrates the upper end of an erect carton formed from the blank of Fig. 1;

Fig. 4 illustrates an insert for use with a carton made from a modified form of the blank of Fig. 1;

Fig. 5 illustrates an alternative form of blank, and

Fig. 6 is a fragmentary perspective view of the lower end of a carton made from the blank of Fig. 5.

The blank of Fig. 1 comprises four interhinged wall panels 1, 2, 3, 4, to which are hinged four intermediate panels 5, 6, 7, 8, to which in turn are hinged closure flaps or base flaps 9, 10, 11, 12, the hinges bounding the opposite sides of the intermediate panels being parallel. Flaps 10, 11 are formed with substantially diagonal hinges 13, 14, extending from or from near one corner thereof adjacent to its intermediate panel and adjacent to a flap which is not formed with such a hinge line.

A flap 19 is provided at the righthand edge of panel 4 to enable that panel to be hingedly secured to the lefthand edge of the panel 1.

In the manufacture of the carton the panels 5, 6, 7, 8, are upturned into face to face relationship with the wall panels 1, 2, 3, 4, and secured thereto preferably by an adhesive and the outer portion 15 of flap 10 to one side of the hinge 13 is secured to an adjacent portion 16 of the adjacent flap 9, preferably by an adhesive; likewise the part 17 to one side of the hinge 14 of flap 11 is secured to the part 18 of flap 12.

Collapsed cartons made from blanks as shown in Fig. 1 are supplied to the customer with the panel 4 hingedly secured to the panel 1 and with the intermediate panels 5, 6, 7, 8, secured to the inner faces of walls 1, 2, 3,

4, and with the closure flaps 9, 10 and 11, 12, secured together as above described so that the closure or base formed by the flaps 9, 10, 11 12 can be readily erected by pressing together the opposite edges of the collapsed carton to bring the side walls at rightangles to one another.

It will be noted that each of the base flaps 9, 10, 11, 12 is formed with an arcuate cut-out to enable the base when erected therefrom to present a circular opening in the middle as may be required in cartons to contain say an electric lamp.

Fig. 2 illustrates the relative dispositions of the parts so far described when the carton is erect and shows the intermediate panels 5, 6 folded up against the walls 1, 2.

At its upper end the wall 2 has hinged thereto an intermediate panel 20 to which is hinged an insert flap 21 with a hole in the middle and with flanges along three of its sides. The position of the insert flap 21 in the erect carton is shown in Fig. 3, the intermediate panel 20 having been folded down against the inner face of wall 2 and the flanges of the flap 21 having been folded up against the walls 1, 3, 4. At its upper end wall panel 4 has hinged thereto a lid flap 22 to which is hinged a lid flange 23. The wall panels 1, 3 have inner closure flaps 24 hinged to their upper ends.

The blank of Fig. 1 may be modified by omitting the intermediate panel 20 and insert flap 21 which when the carton is erect can be replaced by a separate insert 25 (Fig. 4) provided with a hole in the middle and with flanges along its four sides.

The blank of Fig. 5 comprises four interhinged wall panels 31, 32, 33, 34 to which are hinged intermediate panels 35, 36, 37, 38 to which in turn are hinged closure flaps 39, 40, 41, 42. Flaps 40 and 42 are formed with substantially diagonal hinge lines 43, 44 extending from or near one corner thereof adjacent to the intermediate panel 36, 38 and adjacent to the flaps 39, 41 which are not formed with such a hinge line. In the manufacture of the carton the panels 35, 36, 37, 38 are folded into face to face relationship with the wall panels 31, 32, 33, 34 and secured thereto and the outer portions 45, 46 of flaps 40, 42 are secured respectively to adjacent portions 47, 48 of adjacent flaps 39, 41. The lower end of an erect carton formed from the blank of Fig. 5 is shown fragmentarily in Fig. 6.

WHAT WE CLAIM IS:—

1. A collapsible carton in which each of four interhinged side walls of the carton has at the same end thereof an intermediate panel which is folded against the side wall and which has hinged thereto a closure flap which is thereby spaced from that end of the wall, two of said flaps each being formed with a substantially diagonal hinge line extending from one corner thereof adjacent to its intermediate panel and at the outer side of which each of said two flaps is connected to an adjacent flap to provide a self-erecting closure or base which when erect is spaced from said end of the carton.

2. A carton as claimed in claim 1, in which the closure flaps combine to form the base of the carton, the width of said intermediate panels determining the extent to which the base is spaced above the end of the carton.

3. A carton as claimed in claims 1 or 2, in which the closure flaps are formed with cut-outs of arcuate or other suitable form to present, when the carton is erect, a base with a hole of circular or other desired shape.

4. A carton as claimed in claims 1, 2 or 3 in which one of said interhinged side walls at the opposite or upper end of the carton has hinged thereto an intermediate panel to which is hinged an insert flap having a hole in the middle and flanges along its three other sides, said intermediate panel being folded down against the inner face of the wall to which it is hinged and the flanges of the flap being folded up against the inner faces of the other three interhinged side walls.

5. A carton as claimed in any of the preceding claims 1 to 3, in which the upper or opposite end of the carton has a separate insert provided with a hole in the middle and with flanges along its four sides, said flanges being folded up against the inner faces of the four interhinged side walls.

6. A carton as claimed in any of the preceding claims, in which the upper or opposite end of one of the wall panels has hinged thereto a lid flap to which is hinged a lid flange.

7. For making a collapsible carton, a blank comprising a row of four interhinged wall panels, a row of four intermediate panels hinged respectively to the wall panels at one end thereof, and four closure flaps hinged to the intermediate panels, two of said closure flaps having substantially diagonal hinge lines extending from or near one corner thereof adjacent to its intermediate flap.

8. A collapsible carton, or a blank for making the same, constructed and arranged substantially as herein described with reference to and as illustrated in Figs. 1, 2 and 3 of the drawings accompanying the Provisional Specification.

9. A collapsible carton, or a blank for making the same, constructed and arranged substantially as herein described with reference to and as illustrated in Figs. 4, 5 and 6 of the drawings accompanying the Provisional Specification.

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12, Church Street, Liverpool, 1,
Chartered Patent Agents.

PROVISIONAL SPECIFICATION

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Said closure flaps will usually be base flaps and the width of said intermediate panels dependent upon the extent to which it is desired that the base should be spaced above the end of the carton.

If desired said closure flaps may be formed with cut-outs of arcuate or other suitable form to present, when the carton is erect, a base with a hole of circular or other desired shape.

The invention includes a carton blank comprising a row of four interhinged wall panels, a row of four intermediate panels hinged respectively to the wall panels at one end thereof and four closure flaps hinged to the intermediate panels, two of said closure flaps having substantially diagonal hinged lines extending from or near one corner thereof adjacent to its intermediate flap.

The invention is further described by way of example with reference to the accompanying drawings in which:

Fig. 1 illustrates one form of blank according to the invention;

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Fig. 5 illustrates an alternative form of blank, and

Fig. 6 is a fragmentary perspective view of the lower end of a carton made from the blank of Fig. 6.

The blank of Fig. 1 comprises four interhinged wall panels 1, 2, 3, 4, to which are hinged four intermediate panels 5, 6, 7, 8, to which in turn are hinged closure flaps or base flaps 9, 10, 11, 12, the hinges bounding the pposite sides of the intermediate panels being parallel. Flaps 10, 11 are formed with substantially diagonal hinges 13, 14 extending from or from near one corner thereof adjacent to its intermediate panel and adjacent to a flap which is not formed with such a hinge line.

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In the manufacture of the carton the panels 5, 6, 7, 8, are upturned into face to face relationship with the wall panels 1, 2, 3, 4 and secured thereto preferably by an adhesive and the outer portion 15 of flap 10 to one side of the hinge 13 is secured to an adjacent portion 16 of the adjacent flap 9, preferably by an adhesive; likewise the part 17 to one side of the hinge 14 of flap 11 is secured to the part 18 of flap 12.

Collapsed cartons made from blanks as shown in Fig. 1 are supplied to the customer with the panel 4 hingedly secured to the panel 1 and with the intermediate panels 5, 6, 7, 8, secured to the inner faces of walls 1, 2, 3, 4, and with the closure flaps 9, 10 and 11, 12 secured together as above described so that the closure or base formed by the flaps 9, 10, 11, 12 can be readily erected by pressing together the opposite edges of the collapsed carton to bring the side walls at rightangles to one another.

It will be noted that each of the base flaps 9, 10, 11, 12 is formed with an arcuate cut-out to enable the base when erected therefrom to present a circular opening in the middle as may be required in cartons to contain say an electric lamp.

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vided with a hole in the middle and with flanges along its four sides.

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Published by The Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies may be obtained.

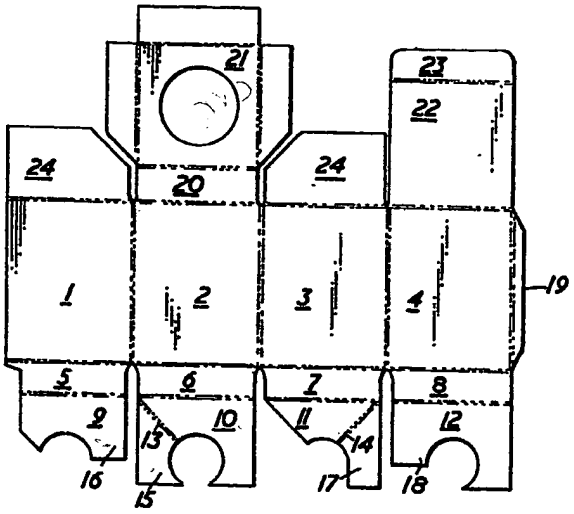


FIG. 1.

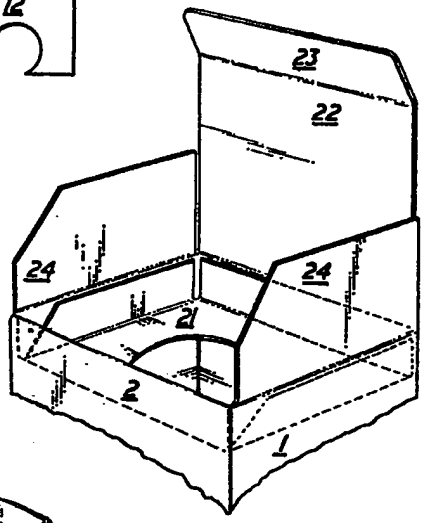


FIG. 3.

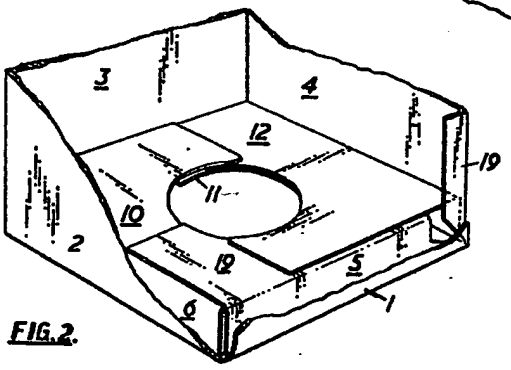


FIG. 2.

853,891 PROVISIONAL SPECIFICATION

2 SHEETS

This drawing is a reproduction of the Original on a reduced scale.

SHEETS 1 & 2

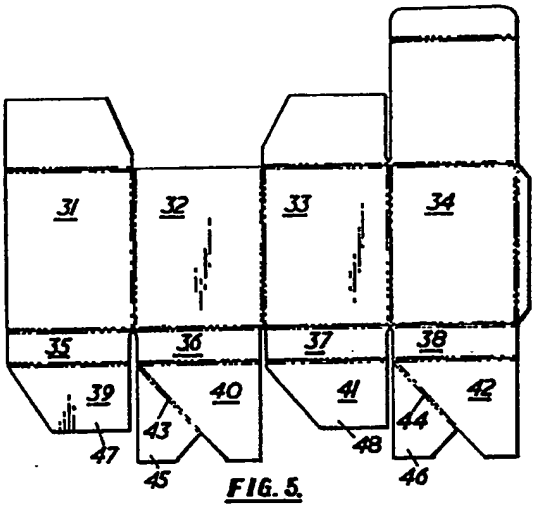
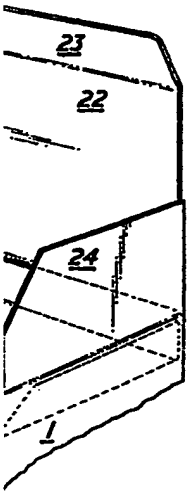


FIG. 5.



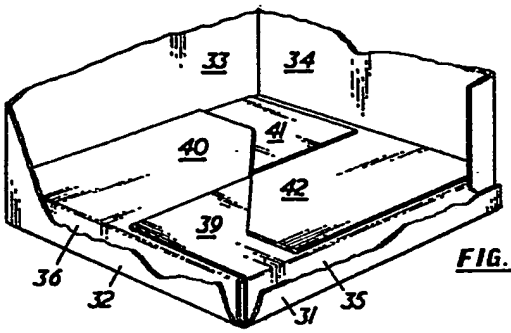


FIG. 6.

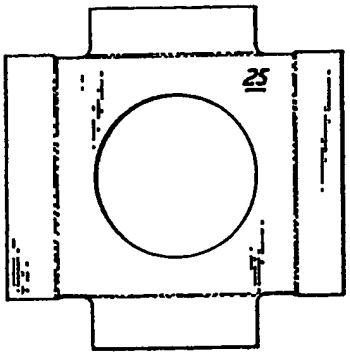


FIG. 4.

853,891 PROVISIONAL SPECIFICATION
2 SHEETS

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SHEETS 1 & 2

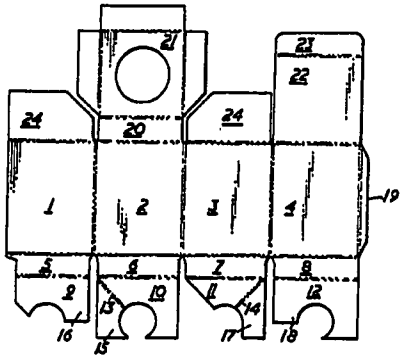

FIG. 1.

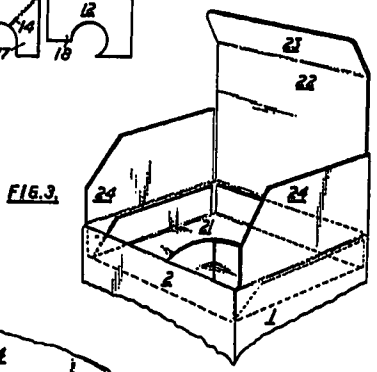

FIG. 3.

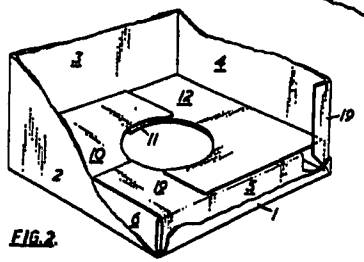

FIG. 2.

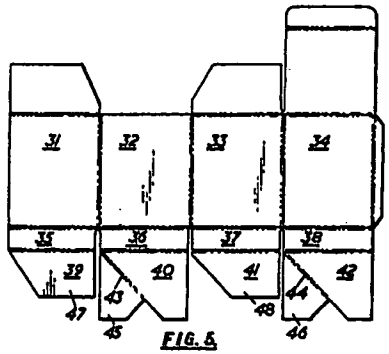

FIG. 5.

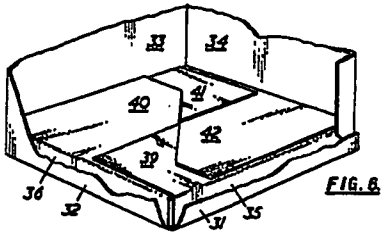

FIG. 6.

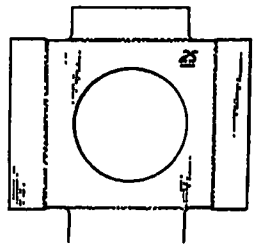

FIG. 4.